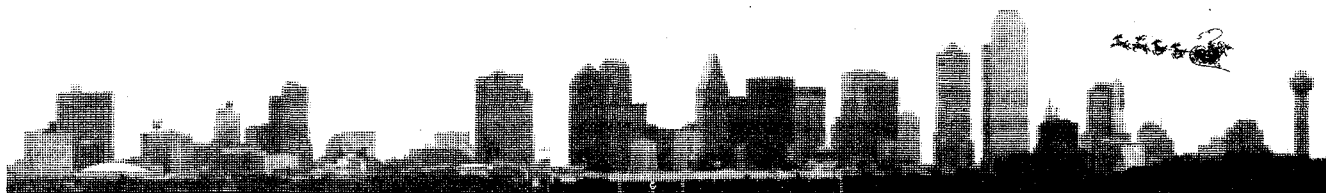


MCCC NEWS

Metroplex Commodore Computer Club



Fort Worth

Volume 9 Issue 12 – December 1991

Dallas

AmigaOS 2.0 and ECS

It's finally here
by Johnny C. Kitchens

Finally, after a very long wait, everyone can now have 2.0 for their Amiga. This line probably makes as important a statement as any that an Amiga owner could want to hear. 2.0 has been on the minds of Amiga owners for a few years now and has been mentioned probably as much as anything else combined. The Toaster has been big, but 2.0 will be within the reach of many more users and more will end up with it. Writing a full review of this new operating system would probably take a full length book, so I've decided to give general coverage and give you an idea of what 2.0 is all about.

From the beginning the Amiga has received a steady upgrade to its operating system. Each upgrade appeared to be a clean-up or fine-tuning of bugs that popped up along the way. With the arrival of 1.3, it appeared that Commodore had it right. It was right as far as that particular way of doing the OS was concerned. Many users of other computers had comments on the OS. "Why did they make look that way?" "It appears that a child drew it with crayolas." "Why is it so hard to do this or that with it?" Many of these question are legitimate, but did Amiga users really care? Commodore realized that improvements were needed and that a look more appealing to professionals was definitely needed. Early rumors of the new OS had it going by the name of 1.4. Apparently Commodore wanted to make it clear that the new OS wasn't just a step, but a leap for the Amiga. 2.0 became the new name. For many the first view of 2.0 would come with the introduction of the 3000. Commodore announced a release date for the rest of the Amiga line in September. But suddenly Commodore had a problem they hadn't taken fully into account: compatibility. Reports of the new OS not working with existing software generated negative thoughts for many people. It looked as if buying 2.0 would cause extra spending upgrading software. This was one of the major reasons for the hold up on the release of 2.0. So – was it worth the wait? Definitely!!!

First thing about 2.0 to come to grips with will be installation. Installing the ROM chip isn't the hard part – it's the software. If you've been using your Amiga for any length of time you've probably put together a Workbench that you are comfortable with and you know where everything is. People with hard drives and a large collection will have the most work... backing up their 1.3 stuff until they are sure of what they don't need – and then setting up a totally new Workbench. I'm sure there will more than a few who will take a look and worry. Although many things will be familiar, there is just as much that will be new. It looks different due to color rearrangement – and more colors. The menu bar has many new commands to use, and even the controls are new. There are still two little boxes up in the right corner of windows and drawers... but with a difference. I've clicked on the left box several times now trying to move the window back only to see it resize. It's a zoom control which allows you to set the window size to one of two settings. The right button now performs the function of both buttons of 1.3. It's great that you can set the background of Workbench to whatever you want. You can definitely customize the whole thing to your heart's consent.

Setup will eventually lead you to a radically reworked Preferences, although different setups for many things are now simpler and straightforward. Perhaps the greatest change here is the screen setup. If you have the proper monitor and the Enhanced Chip Set, you can select all available screen modes with the click of a mouse. Finally PAL is just a click away. Each selection gives you its characteristics and requirements. Just as impressive, the new font selector now allows you to select fonts for three different areas. Workbench icons text, screen text, and system default text now can each have their own font. 2.0 now supports its own scalable fonts, and provides a program called Fountain which allows you to set your own custom font sizes using the scalable fonts provided. This

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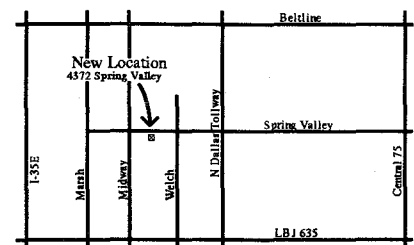
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ability will become more important with time, especially in the use of the higher resolutions. Super Hi-Res definitely needs more than a 8 point font.

In operation, 2.0 will seem both new and old. The first thing I noticed was that the disk drives are quieter in operation, running virtually silently compared to the old buzz I used to get. Unfortunately the clicking we've all come to detest is still there. WHY? You can now boot up a disk from any drive with 2.0, which will take a load off of poor old DF0:. Now we have FFS available to the floppies. Once you have used a FFS floppy, going back to OFS will be hard to do. There is more room (about 50k), it's quicker, and it's much improved overall. Unfortunately 2.0 will have to be around for awhile before it becomes common. Many operations are quicker due to things having been moved from disk to ROM, and to improved coding of the commands themselves. The user will find most operations the same as always, double click and go. Icons created with 1.3 will look different in 2.0 due to color changes and a new embossed look. Extended selection has been radically changed - it's now a mouse only operation. Simply stretch the electronic equivalent of a rubber band around the icons you want to manipulate, and they are all selected ready for you to manipulate in any way you want. Many have expressed a dissatisfaction with 1.3's ED command for editing text files. 2.0 now offers a configurable ED, letting you set up commands, macros, and menus to your liking. Consider it a roll-your-own editing tool.

I hope I've given you some idea of the changes that have been made. One thing is for sure, if you've been bored with your Amiga, you can look forward to setting up your new OS. The manual alone should be worth the price. I'm glad to see them go back to the style of the 1000 manual - a ring binder. But it's big and heavy, and it has a strange ring shape. Trying to move quickly through the manual is a bit hard. The pages repeatedly stick on a corner bend of the rings. The manual is very well laid out, complete with heavy index pages, allowing you to find certain sections instantly. Just don't expect to turn too many pages quickly.

I'm sure compatibility is weighing heavily on the minds of many. I've had excellent results with commercial software and less so with PD. Most PD software works fine, but I've noticed older software having problems. An example was SID 1.06. With 2.0 it suddenly opened a small window which constantly intercepted operations and would cause a crash. The latest version of SID fixes that. When these crashes do occur, we are presented with another change. Guru bites the dust... kind of. Rumor had it that Commodore was doing away with the Guru. All they did was give it two new faces. One face pops up on the Workbench screen itself. This has half of the old Guru number we've seen in the past. The first 8 digits are there, but now you are offered a choice of suspend or reboot. Suspend may or may not stop the offending problem, but at least you can finish up what you are doing before resetting the system. Reboot does just what it says. The other face looks more familiar. I've noticed that it comes in two forms. They both appear as a box telling you what has gone wrong, and to push a mouse button to

resume. If the box is yellow, this is true. If the box is red, pushing the button doesn't get you a thing. Time to push those three keys. One incident I encountered was during the loading of a large file. The box popped up during load. It was yellow, and I proceeded to push the mouse button 8 times before the file finished loading and proceeded to run as if nothing happened. I believe the programmer was trying to load it in the wrong location of memory, a common problem with those that fail. If I had to pick an area that will be the greatest problem with compatibility, it will be games. If you like playing games with your system, then this could be a real reason for considering a ROM switch, which will allow you to switch between 1.3 and 2.0. The real fix for compatibility for 2.0 will be everybody rushing out and buying it. That may never happen, and as a result 1.3 will be a major consideration for years to come.

At the time of the 3000 release and 2.0 announcement came another upgrade. This was called ECS, which stood for Enhanced Chip Set. Because of this close timing, confusion over ECS prevails. The ECS was originally to be a new 1 meg Agnus and a new Denise chip. Unfortunately Agnus began to get different names, which really mixed things up. The 3000's 2 meg Agnus added to the confusion. The ECS consists of the Super Agnus and the Super Denise chip. The Super Agnus is the 1 meg version of the chip. The ECS was to be released as an upgrade set. Many people acquired the Agnus shortly after it was announced and then Commodore began installing them, but not the Denise. Since the two chips were listed as a set, are those who already own a Super Agnus going to have to buy another to get a Super Denise? No - and the Super Denise can finally be purchased. If you don't have Super Agnus, get it first, as Super Denise needs Super Agnus. Super Denise is a direct replacement for the original Denise chip. Like everything else, it's the breaking down of your computer setup to get inside that's the hard part of installation. Super Denise does not give more colors. What it does offer are new screen resolutions. Here's a list of some of the resolutions now available.

Mode	Resolution	Colors
NTSC Hi-Res	640 x 200	16
NTSC Hi-Res Interlaced	640 x 400	16
NTSC Super Hi-Res	1280 x 200	4
NTSC Super Hi-Res lace	1280 x 400	4
PAL Hi-Res	640 x 256	16
PAL Hi-Res Interlaced	640 x 512	16
PAL Super Hi-Res	1280 x 256	4
PAL Super Hi-Res lace	1280 x 512	4
Productivity	640 x 480	4
Productivity Interlaced	640 x 960	4
A2024-10Hz	1008 x 800	4 Gray Scale
A2024-15Hz	1008 x 800	4 Gray Scale

These are not the only resolutions, just the main ones.

The most exciting of the group is the Productivity mode - a non-Interlaced display with no scan lines, it's just the thing for desktop publishing or CAD work. There



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is a problem though. You need a multi-sync to use it and it will slow the system down with bus contention – but you save the cost of display enhancing hardware. The bus contention will exist with all the newer modes available though. The Super Hi-Res Interlaced is a sight to behold, but it's going to awhile before a useful program comes along that can properly use this setting. The recently released *Directory OPUS* can use it but the fonts are too small to read comfortably. A fix is in the works. Another feature of the new Denise is a programmable scan rate. This feature has been touted as an advantage to those wishing to take pictures directly from the monitor screen. Other uses are sure to follow. I wonder if there are any hidden capabilities. (Remember Extra Half Bright mode?) Someone will come up with something that was previously thought not possible with this new chip, and the Amiga and its users will benefit from his findings. It is obvious that the 3000 will be more comfortable using these new modes and an accelerated Amiga should be comfortable with them as well. Amigas running the stock CPU may suffer some slow-downs... especially when multitasking. As things stand, Super Denise can't be counted as a must have. It will become more useful in the future. If you already have a de-interlacing device then Productivity offers no advantage to you. The decision is yours as to whether or not it's worth having for Super Hi-Res.

Will the next major change to the Amiga take this long? Hopefully it will be an all new Amiga – one that will give us all the features we've been asking for. 24 bit color, 16 bit sound, 32 bit custom chips, and so on and so on... ✓

AMOS Revisited

A look at the latest version
by Allen Wadle

At the end of July, I purchased AMOS version 1.2. AMOS is a BASIC dialect that includes support for many graphical, sound, and music features. There were several very bad things that I encountered with it. These were reported on in the September issue of our MCCC newsletter. After that I went back to The Edge

The version 1.3 update seems to have fixed all the problems. Everything seems to basically work as advertised.

(where I had purchased it) and demonstrated the things that it wouldn't do properly as well as things that would cause it to hang up the computer. Since I had written my name in the manual, they offered to give me store credit for \$60 (I had spent \$80), or to upgrade it to the newer version 1.3. The version 1.3 upgrade comes with the compiler and 3-D modeler. We tried the upgrade in the store and it seemed to fix the problems that I had encountered. About a week after that, as a result of sending in my registration card in August, I received from Europress Software the same version 1.3 update disk that The Edge had used.

With this version 1.3 I have encountered no hangups. Everything seems to basically work as advertised. It seems strange that the update documents make no mention of "fixing" any of the problems that I had encountered. However, AMOS 1.3 is structured to configure itself either for NTSC (US standard) or PAL (European standard) based on separate configuration files. That was not true in version 1.2. It is my belief that there was some NTSC/PAL bug in the 1.2 version that they have fixed in the updated version. It should also be noted that they admit that the only way to print out your program is to "mark" the whole program in the block menu, then do a "block print" from that same menu. They say that LLIST doesn't work because it is a residual from the ATARI ST version. All-in-all, it seems to work OK now, with no major problems encountered.

It is my belief that no store in the US should be selling AMOS version 1.2 without supplying the 1.3 update disk at the same time. If anyone needs this update, they can contact me to borrow the public domain update disk. ✓

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$$3D + U = \text{confusion}^2$$

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Ansoft reserves the right to cancel or combine any course. Class size will be limited.

Amiga Library News

Public domain and shareware picks
from Bill Raecke

Pictures

It's not unusual to see new pictures appear in the library. In fact, judging from the size of my growing collection, it's a far too common occurrence. But there are a couple of additions to the library this month that really stand out from the crowd. On MCCC-A_347 are a couple of ray-traced images called *LIZ11* and *Pool*. They are exceptional.

Directory Opus ARexx Scripts

For those of you who own *Directory Opus* and *ARexx*, MCCC-A_348 contains a couple of ARexx scripts written by Harold Williams that you may want to add to your system. The first is a simple little thing that adds a DRAWER rather than just a directory (that is, a directory with a drawer icon). I know it's possible to change *Directory Opus* to work either way by specifying your preference in the configuration program – but what if you want icons only part of the time? This script allows you to set up a separate button (perhaps the right mouse button on the MAKEDIR gadget) to perform this action when desired.

The other script is a little more complicated. This one lets you enter a string pattern then reduces the files displayed in the directory window to only those which match that pattern. This can be very handy when trying to reduce a large directory down to something less cluttered.

Imagine Objects

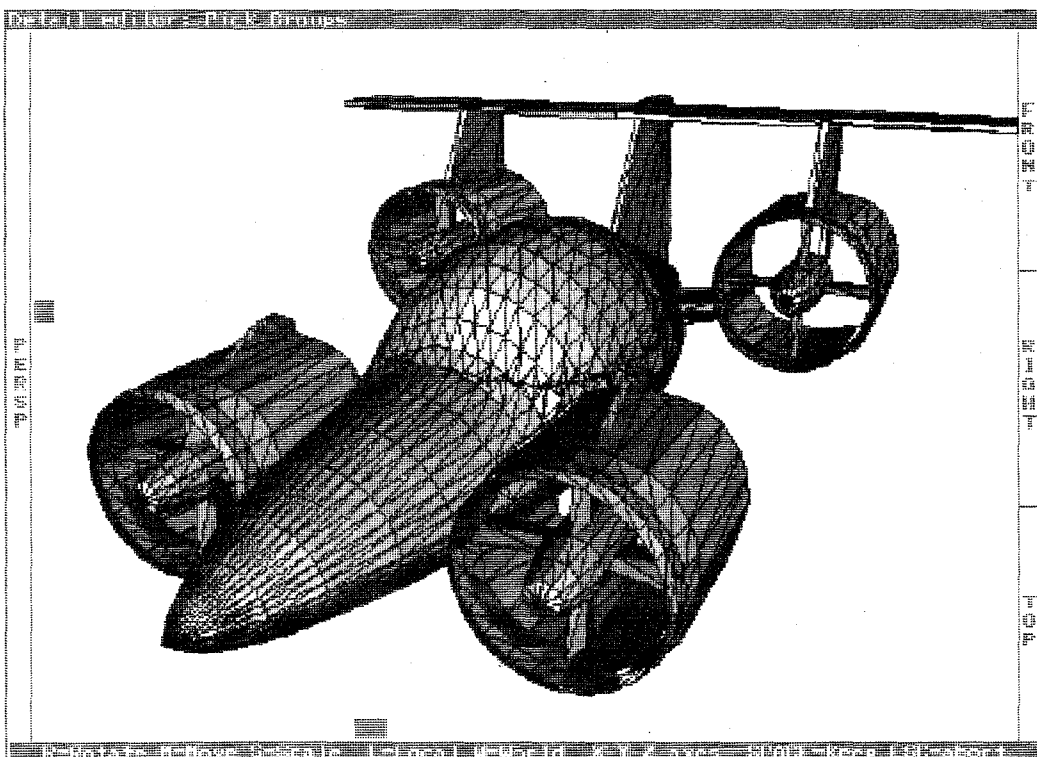
To follow in the tradition established last month, this month sees the addition of a number of objects for *Imagine* added to the library. These are better than those added last month. On MCCC-A_348, look for a nice "Aircar", a set of dining room furniture complete with a 24-bit mahogany brush for mapping, and a beautiful "Hourglass"

with twisted columns. On MCCC-A_351 is a Basketball, complete with a brush to make it look real, and a "Triplane" from WWI. On MCCC-A_352 are a whole city's worth of buildings as well as a shark (called "Jaws" and various other objects. If you are "into" *Imagine* you will want these.

Postscript Fonts

And what month would be complete without a selection of Postscript fonts for all of us *PageStream* users. On MCCC-A_353 is a very pretty font called "Lilith-Light". On MCCC-A_354 are several more including a sans serif font with snow on the letters that should be perfect for use this time of year. ✓

Lilith-Light TONE AND DEBS



Aircar – from MCCC-A_348

Data Compression

How does it work? – an introduction

by Charles Lacour

The club bulletin board recently got two new modems, 2400 baud with both MNP-5 and V.42bis data compression. This article is for those who are wondering what those terms mean, or those who are interested in knowing how it all works.

First, a definition: data compression simply means taking something that is long (=large, =slow) and replacing it with something short (=small, =fast), according to a scheme that will allow you to turn it back into its original form when you need it. (That second half is rather important, by the way...)

It doesn't matter whether you're trying to save disk space by making the files smaller, save time (and/or money) in up/downloading files from a BBS, or speed up response with interactive software somewhere else – the idea is to put the data in a smaller form, so that whatever you are going to do with it, you don't have to do as much of it.

HISTORY

MNP-5 and V.42bis are two schemes for doing this compression/decompression process when transferring data, usually via a modem. MNP-5 stands for "Microcom Network Protocol, Class 5".

There are (currently) 10 protocols, which are downward compatible (a modem which can handle MNP-8 can automatically handle MNP-5). MNP-5 and MNP-7 are the compression protocols – the others are mostly error checking and correction. Since we don't have it, I probably won't go into MNP-7.

"V.42 bis" is the Consultative Committee for International Telephone and Telegraph's (CCITT's) recommended protocol for data compression. Don't take any of this as gospel, but to the best of my knowledge, CCITT is a public standards group, somewhat like ANSI. I have no idea what connection, if any, it has with the company ITT, but as far as I know, nothing it produces is proprietary. They have some truly strange habits for naming things – the "V.42" is the name of the protocol, and 'bis' is the version. If you don't mind, I'm going to refer to it as just V42 from now on.

COMPRESSION TECHNIQUES

I'm not going to try to cover all of the compression techniques used, or thought up – just the more important ones, and in particular the ones used in MNP5 and V42.

• Run length:

This takes a repeating sequence of characters (a line of asterisks, for example) and substitutes a marker string and a count. For instance, say I have a line of 72 asterisks that I want to compress. Since it doesn't show up very

often in ordinary text, I use a " as my marker, and the resulting string is "<72>" (the brackets indicate a one-byte binary number). Obviously, this 3-byte string won't take nearly as long to transmit as the original 72 characters. With this scheme, any time you have four or more of the same characters in a row, you save space. Blanks are far and away the most common character to get trimmed down this way.

• Pattern substitution:

This is a very powerful, but limited, technique. You substitute a short code for a long string. For example, let's say we're going to use the 128-character ascii set for individual letters. We're going to use the binary numbers 32768 thru 65536 as codes. This gives us a nice, simple rule to use: if the high-order bit on the byte coming in is a zero, this byte is a letter. If it's a one, then it's the first byte of a two-character codeword. This gives us a possible dictionary of 32K words that we can represent with only two bytes apiece. The advantages of this technique are that it is fast and cheap (in terms of CPU time) and gives you a high degree of compression, especially for the ease with which it can be done. The down side is that it is very data-dependent. A dictionary that is superb for ASCII text would be a disaster for a compiled program.

I'd like to try setting something like this up for the bulletin board, especially for the menus and messages. Since the menus don't change but once in a blue moon, you could send the entire menu (a few hundred characters) in one or two bytes! How's that for compression? There are a lot of problems with making a change like that (how to handle people who don't have it, for one) and this isn't even to the point of vaporware yet, so don't get your hopes up too high. If there is enough interest in it, I'll talk to the sysops and see what the possibilities are. *(Note from the sysops: It would be extremely easy to send a two byte menu. [Messages are improbable.] The problem would be devising a scheme to interpret it at the other end. Such a critter doesn't exist – and if it did would have the major disadvantage of using valuable computer resources since it would necessarily be a software solution.)*

• Huffman coding:

Huffman (named after the guy who invented it) coding is a little different than the previous types, because it doesn't deal with things at the byte or word level, it does things in terms of bits. The basic idea is to use a short string of bits (maybe just 1) for frequently used characters, and use longer strings for less frequently used characters.

A short historical note: Huffman didn't invent the

idea of using varying-length bit strings for compression. He did invent an algorithm for figuring out which characters should be represented by which bit strings that is guaranteed to produce the shortest average string length (which means the highest degree of compression). Huffman encoding suffers from the same drawbacks as pattern substitution – it works great on files that have the same distribution of characters as the table was originally built for, but it can be horrible for something with a drastically different layout (ASCII vs. binary programs pops to mind again). Which segues quite nicely to the next type,

- Adaptive Huffman coding:

One small change to a Huffman-code using program can make a real big difference in how well it works: a count field. Let's say you're using an English language distribution table, where the letter "e" is the most frequently used. For the example, we'll assume it has a bit string of "01" and the letter "t" has a bit string of "101". In "typical" English text those are reasonable, because "t" is a close runner-up in frequency to "e". Now say we run the program on a file that (for whatever reason) has noticeably more "t's" in it than "e's". Without the count field, we're stuck – we're going to have 1500 3-bit strings and 800 2-bit strings (I'm ignoring the rest of the characters for this example). With the count field, we bump a counter each time we have a "t". When this counter exceeds the counter for the "e", the two of them swap places. Now a "t" is "01" and "e" is "101". You do this on both compression and decompression so that you don't need any kind of message to the decompression routine saying "the table changed". The decompression routine starts out with the same table and algorithm for adjusting it as the compression routine, so it automatically adjusts the table the same way. The end result might look like this:

	2-bit strng	3-bit strng	Length Avg	(bits) Total
Standard Huffman code:	800	1500	2.65	6100
Adaptive Huffman code	1478	822	2.36	5422

- Lempel-Ziv string encoding:

I'm a little frustrated on this, because the book I'm getting the majority of my info from doesn't go into nearly as much detail on this as it does the others. Add the fact that it is a more complex technique and the end result is that I'm pretty vague on how it works. Since most of what little detail I do have is for the modification of it that V42 uses, I'll put the "how it works" stuff in that description and just mention a few interesting little tidbits here.

The algorithm is named after Abraham Lempel and Jacob Ziv, who first published it in 1977. The basic concept is to dynamically build a table of strings, each represented by a codeword. It has the roughly the same relationship to pattern substitution that adaptive

Huffman encoding has to the standard Huffman code.

The program ARC, (originally developed for IBM PC's, and later ported to other environments) uses one of three algorithms for compressing files, whichever gives the best results:

1. No compression (which guarantees the archive will never be larger than the original file)
2. Run length substitution
3. Lempel-Ziv string encoding

Since the program LZ was originally written to do ARC's job, but do it better, anybody want to take a wild guess where its name came from?

- MNP-5

(Didn't think I was ever going to get here, did you?) MNP5 uses a two stage compression algorithm: First it uses run-length encoding to eliminate any long strings of characters. The "repetition" flag is three occurrences of the same character, such as "CCC" or "****" followed by a one byte count, ranging from 0 to 250. 0 means it is just the three characters.

Next, it uses an adaptive bit-string code. I started to call it an adaptive Huffman code, but they don't use a Huffman code. The code they use ranges from 4 to 11 bits in length. This is something of a weakness, because the best compression factor they can hope for is 2 (8 bits / 4 bits). Only the 32 most common characters can be expressed in 7 bits or less, which means the other 224 either get no compression or are actually longer than they would be without "compression". On the other hand, with most data, the 15 most common characters (all of which are six bits or less with this scheme) account for more than 50% of all the characters. The end result is a compression ratio of somewhere between 1.5 and 2.0 for most data. Worst case is a compression ratio of about 0.73.

V.42 bis

As mentioned earlier, the Lempel-Ziv string encoding algorithm is the heart of the V42 protocol. The algorithm consists of a table of strings, routines for finding/matching them and routines for adding and deleting strings from the table. The table starts out with the 256 possible values of one byte, each defined as a one-byte string. These "strings" are a permanent part of the table – they cannot be deleted. (Note: from here on, I'm winging a lot of this. I just don't have many of the details I need to give an accurate example of how V42 works. What you're about to see is my concept of how something like it would be set up. Some of the details, like how many bits the codeword is, are invented out of thin air. I'm also going to gloss over some of the technical difficulties in implementing something like this. Sorry, but it's the best I can do at the moment, and this article is at least a month behind schedule already. If I can get some specific info on V42, I'll do an in-depth article on it later.) < 12

EDGE SUNDAY HOURS PERFECT FOR HOLIDAY SHOPPING

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December 1	Introduction to Telecommunications
December 15	Introduction to the Amiga
December 29	Introduction to Animation, 2-D
January 12	Introduction to Imagine
January 26	Introduction to Lightwave 3-D
February 9	Introduction to Desktop Publishing
February 23	Introduction to Desktop Video

All classes will be held on alternating Sundays, from 5-7 PM. Cost is \$25 per person (\$35 for the Telecom course, but this includes a 1200 modem and PD Telecommunications software). Space is limited, so sign up now!

Official Commodore Christmas Specials

(prices effective until Dec. 31, 1991)

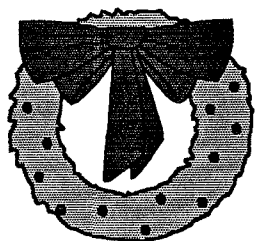
Amiga 500 DS	\$399.99
512K Memory, and is bundled with a joystick, Kindwords, FusionPaint, Indiana Jones and the Last Crusade, F40 Pursuit, and F/A-18 Interceptor.	
Amiga 500P	\$499.99
1 Megabyte of Memory	
Amiga 2000	\$999.00
1 Megabyte of Memory	
Amiga 2000HD Professional	\$1299.00
1 Meg of memory, 50 Meg Hard Drive, and comes bundled with Advantage spreadsheet, Transwrite, Pagesetter II, Goldfile, Paint 2000, Music 2000, MediaShow, CROSSDOS, and an instructional video.	
Amiga 3000 16/40	\$1849.00
System comes equipped with a 16 MHz 68030, 2 Megs of Memory, 40 Meg Hard Drive, Workbench 2.04, and AmigaVision.	

The Edge Computer and Video

Christmas Sale

Saturday December 14
11:00 AM - 7:00 PM

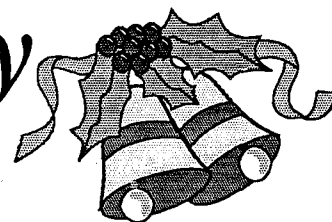
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Music!



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The Edge Computer & Video never does anything in a small way. So plan now to join us, and help us celebrate the holidays

IN STYLE!

For this example, codewords are 10 bits in length, which gives us 1,024 possible strings, of which 256 are used up by the one-byte codes. If we don't keep those, it's entirely possible we could end up with a string of bytes we had no way to send.

The first sentence we're going to send is "THE TAPE WENT TO THE TOWN." I'm using all capitals for simplicity's sake.

Codes are shown as <###>. The number is in decimal.

String	Transmitter action	Receiver action
T	send <84> (T)	decode. make "T" current string.
H	send <72> (H) add "TH" to table, code #257.	decode. add new string "TH" to table, code #257. make "H" current string.
E	send <69> (E), add "HE" as #258	decode. add "HE" as #258
(blank)	send <32> and add	decode. add "E_" as #259
T	send <84> and add	add "T" as #260
A	send <65> and add	add "TA" as #261
P	send <80> and add	add "AP" as #262

So far, we've sent 70 bits to do the work of 56. Now is when it begins to pay off...

E_	send <259> (E_)	decode. no table changes.
W	send <87>	add "E_W" to table as # 263
E	send <69>	add "WE" as #264
N	send <78>	add "EN" as #265
T	send <84>	add "NT" as #266
_T	send <260> (_T)	decode
O	send <79>	add "TO" as #267
TH	send <257> (TH)	decode
E_	send <259> (E_)	decode
T	send <84>	add "E_T" as #268
O	send <79>	add "TO" as #269. cmp to #267.
W	send <87>	add "OW" as #270
N	send <78>	add "WN" as #271
.	send <46>	add "N." as #272

Grand total results: 210 bits via this technique, versus 208 if had been sent with straight ASCII. But, we've added several useful strings to our table ("EN", "NT", "TH", "TO"), or if you prefer, we've sent the string with 208 bits, and added 16 entries to the table with an additional two bits. You can see even with this very short sample that the frequency of "hits" was climbing as we went along. Admittedly, this was a very artificial sample, specifically designed to produce a few hits, but in real life, by the time you've sent a page or two of data (1-2K characters) you'll be getting a noticeable improvement.

Discussing the efficiency of the V42 protocol is difficult, because it depends rather heavily on how the particular modem is configured. The standard allows for a maximum string length anywhere from 6 to 250 characters, and requires a minimum of 512 strings. When

they connect, two V42 modems negotiate what the maximum string length and number of strings is going to be. If you have a V42 modem and have been getting drastically different results at different times, that could be why. If you're connected with a modem that can only handle the bare minimum, you're not going to get as good a result as one with a lot of room to spare. The bulletin board's modems use a maximum string length of 16, and a dictionary of 1,024 strings.

Generally speaking, you can expect a V42 modem to be 1.25 to 1.5 times as fast as an MNP5 modem. In many instances, effective throughput is about 4 times as fast as it would be without any compression – effective 9600 baud from a 2400 baud modem, in other words.

One last comment on efficiency – any compression technique has the potential to make things worse than when you started. MNP5's run length scheme (3 of the same character followed by a count byte) will have fits over a file that goes (in hex) "00", "00", "00", "01", "01", "01", ... "255", "255", "255" and repeats. It will blow the original file up by 33%, and since all 256 possible values for a byte are being used, the adaptive bit encoding isn't going to help much either. V42 wouldn't have nearly so much trouble with it (it's considerably harder to 'fool' than MNP5 is) but it's possible to hand V42 a file that drives it nuts also. I mention this because a .LZH file comes as close as anything you'll meet in real life to a random file. Expect to get much smaller performance improvements when up/downloading archived files than when looking at messages or downloading text. Results from a recent test I did:

Compression:	None	MNP-5	V.42 bis
	Size / time	time / ratio	time / ratio
Home1c.zip (database)	255K / 18:25	16:18 / 1.13	15:52 / 1.16
Pool.lzh (HAM pic)	163K / 9:45	9:22 / 1.04	8:25 / 1.15
13 .txt files	60K / 4:10	3:00 / 1.39	2:27 / 1.7

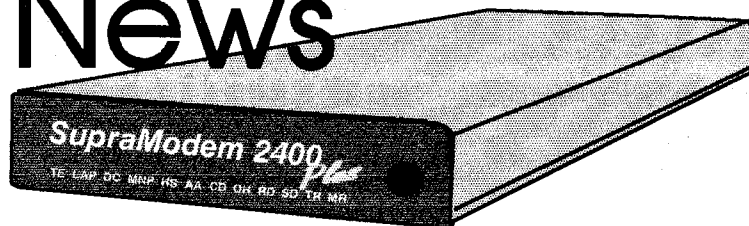
(Thanks to Johnny Kitchens for providing the v42 figures.)

If you're considering a new modem, I'd strongly recommend one with both MNP-5 and V42. V42 is definitely the better compression algorithm, but MNP-5 is more common. Fortunately, since V42 requires so much more processing power than MNP-5, it is fairly trivial to add MNP-5 to a modem that already has V42, so many manufacturers do so. The downside is that having that much processing power in a modem isn't real cheap – expect to shell out a healthy dose of extra money to get V42 over a plain 2400 baud modem. It is possible to get a 2400 baud modem with just MNP-5, but I don't really recommend it. The price of the V42 modems is

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More BBS News

Still more upgrades
by Bill Raecke



It was just last month that I wrote about the purchase for the BBS of a new SupraModem 2400 Plus that added MNP5 and v.42bis error correction and data compression routines to the 268-4191 line. Well, no sooner did that appear in print – in fact before most club members even received their newsletter – there were more changes made. In the past month we have:

- Installed a second SupraModem 2400 Plus
- Installed an ASDG dual serial port card
- Installed a new Quantum P105S hard drive

At this point you may well be wondering why the BBS committee suddenly feels compelled to spend so much of your money. I will try to explain.

Most of this recent equipment upgrade really started last June. And it started as an attempt to improve the performance of the BBS system. As most of you probably know, the BBS had a habit of periodically slowing down to a crawl on one line – either line. You would be cruising along, merrily reading messages, when all of a sudden the text on the screen would slow down to something approximating 100 baud... and it might stay that way for the rest of your session. We had no absolute proof, but our suspicion was that our internal Supra modem was the culprit. So to solve it, we determined that an external modem was in order. Of course, since we run a two-line BBS and the Amiga only has one serial port, that meant that a multi-port serial card was needed. The decision was made to purchase Commodore's multi-port serial card and a SupraModem 2400 Plus. The SupraModem 2400 Plus was selected because the price difference between it and the standard 2400 baud modem was small, and we have quite a few club members who we felt would benefit from the increased throughput. The Commodore serial card was chosen because it offers seven ports and would prepare us well for the future. The modem turned out to be a good choice. The serial card was a big mistake.

It seems that Commodore left a major design flaw in their multi-port serial card. It won't drop DTR – in layman's terms, it won't hang up the phone. Now this is no problem for most home uses. Normally the service or BBS you call will do the hang-up for you. But for a BBS, the inability to hang up the phone is a rather major drawback. Re-booting the system between calls is not a workable option. At this point, it seems rather obvious that what needed to be done was return the serial card straightaway. But it didn't seem that obvious at the time. First, the inability to drop DTR is an "undocumented feature" (read BUG). A great deal of time was spent confirming that there was indeed a bug and that it wasn't simply something in our setup that was keeping it from

working. After we had determined that there was nothing wrong with our setup, there were additional months spent trying to make it work anyway. After all, there is a modem command "+ + + ATH" that will hang up the phone. We tried it – it was unreliable – and when it didn't work it often resulted in a system crash. Then we went on a quest. I called other BBS's across the country asking for help and assistance from other sysops. The best advice I got was to get rid of the serial card. But during this quest I also ran across someone who thought that Commodore had a fix in the works. So now we were on another quest looking for a fix that might have been available. After a month or so checking on that, we gave up. (Best information: there is a fix somewhere in the works. Estimated release: sometime in the future.)

So we decided to trade in the Commodore multi-port serial card on an ASDG Dual Serial Port Card. In the meantime, while we were waiting for the new serial card to arrive, we decided that we might as well make use of the new modem that had been gathering dust. So we removed the standard external modem from the system and put the new Supra in its place. This is where we were when I wrote the article last month. At that time we were running with the SupraModem 2400 Plus and a Supra 2400zi internal modem. The plan was to install the ASDG card when it came in, remove the internal modem and install the standard external modem in its place. But nothing ever works the way it's planned, does it? As it turned out, because of limitations in the BBS software, the two external modems would not function properly together. The only way to make them compatible was to disable MNP5 and v.42bis (or at least to reduce the throughput to a standard 2400 baud). The decision was made to purchase a second SupraModem 2400 Plus so that both lines would provide the maximum throughput for our users.

I want to make it clear at this point that all this trial and error occurs offline. That is, things are tested on another computer, not on the BBS itself. After things appear to be working properly a BBS installation is attempted and things are re-tested. If something doesn't work the new equipment is de-installed and things are put back as they were.

There is one basic question that should come to mind at this point: Was the performance problem corrected? (After all, these changes were started in an attempt to eliminate the occasional 100 baud throughput.) The answer is, yes. Our performance problems seem to have been eliminated. It appears that the Supra 2400zi was at fault – as we suspected. And in the process of correcting that problem we have managed to upgrade BOTH lines to support MNP5 and V.42bis.

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ISHIDO, the Way of Stones

review by Bob Sackett, S.O.C.K

I'm not a big game player. If it requires split second decision making or the dexterity of a Chinese acrobat, I turn it off. That's the kind of stuff I do at work; games are supposed to get you away from it all! I have only been captured by two works in recent years: *Shanghai!*, which I never tire of, and *Lemmings*, which I have played once (which means I have played it 120 times, counting all variations). Now I have another to add to my unfurnished apartment of a game partition; *ISHIDO*.

Like *Shanghai!*, this is a board game played with tiles, or to be more precise here, stones. There are 72 of them in six symbolic markings, each of these in six colors. Thus, there are two sets of 36 unique stones. The board is 8 by 12 squares and the opening setup presents you with one stone already set in each corner and two more diagonally across the center point. Each color and symbol is represented by these six opening stones. Your job is to take the remaining stones, as they are given to you, and put them on the board next to another stone already there.

The rules state that adjoining stones must agree in color or symbol. This is easy at first, but gets more complicated as you start needing to place stones between stones. The scoring is such that, as you do these harder matches, you get more points. Bonuses are given for using all 72 stones in a game (not easy) and performing the difficult 4-way match, where you put a stone in an empty square that is surrounded on all sides. To do this, your stone must match two of these stones in color and the other two in symbol. I still don't have the knack of setting myself up for these glorious moments regularly, on

purpose, but when they do happen, the resulting musical praise makes my day.

Beyond the deceptively simple strategy involved, what grabs me is the sheer beauty of the game. Eight different stone sets are available, ranging from gemstones, to runes, to oriental symbols, and each stone set has its own coordinated board. They are just visually stunning! And, if this isn't enough, there is an editor program included for you to design your own stones.

Various modes of play let you go it alone, play with or against the computer, or with or against a partner. Scores are recorded and stored automatically. Tournament play is even supported. For those of you into the serious side of life, an Oracle is included who will answer one question for you each time you make a four-way match. A query such as, "Why am I here?" will be given a response of such depth and meaning that it might make you pause for a while in the middle of the game to consider it. This gives a new meaning to Guru meditations! It's one complete set, I'll tell you! Even the manual is beautiful!

I regret to inform you of copy protection, but of the least invasive type: a code wheel is required, which by its design sort of gets you into the mood of things. *ISHIDO* is a game you can play immediately, yet mature into as time goes by. You'll soon develop the skills to generate a high score consistently, and, if you let the computer play by itself, it'll even teach you these secrets. Try it; you'll find this to be yet one more reason to never turn on your TV. A mind is a dangerous thing to lose, some worthy said recently. It's yours; use it or lose it! Don't get stoned; go *ISHIDO, the Way of Stones*. ✓

Data Compression

(continued from page 12)

dropping fairly rapidly, and MNP-5 is on its way out, not in.

Incidentally, V42 is available on 9600 baud modems, also – it is a generic compression algorithm, not tied to any one type. Be warned, though: to get full use out of it, you would have to run your computer-to-modem connection at 38K baud or higher, and a stock Amiga will have trouble keeping up with that. (I'd LOVE to have problems like that...)

For those that are interested in the subject, I got most of my data from the book *Data Compression* by Gilbert Held (3rd ed). As technical prose goes, it's fairly well written (translation: you can understand what he's talking about), it covers all of the major techniques, and gives some sample programs for several of the techniques. The book is not without its flaws, but overall, I'd recommend it. ✓

Last Chance for a Bargain!

by John Malmstrom, MCCC Secretary

When I joined this user group in March 1983, we had a four-page newsletter, the choice of attending or not attending the one monthly meeting, and about 100 disks of PD software to choose from. Of course the programs didn't always run on our new C=64's because most of them were designed for the PET. MCCC dues back then were \$20 per year. Well things have really changed since then. Now we can attend any (or all) of the seven chapter meetings each month, browse through the 16-20 pages of one of the best newsletters in the country, and choose from a library of literally thousands of disks crammed full of goodies. And here in late 1991, dues are still \$20 per year. But, not for long.

Increased costs over the past eight years for meeting room rent, printing, postage, and other essentials have made it necessary to either cut back on the services MCCC provides its members or raise the dues. At the November board meeting your Board of Directors reluctantly but unanimously passed a dues increase effective January 1, 1992. The new dues structure will be \$24 per year for an individual or family MCCC membership or \$15 for a six month "trial" membership. BBS dues will remain the same at \$12 per year.

If your membership comes due anytime soon (or not

so soon), and you want to avoid the increase, see your chapter treasurer or mail your check to MCCC, PO Box 813, Bedford TX 76095. As long as we receive it before January 1, 1992, we'll add a year to your membership at the old rate. If you're a BBS member, don't forget to include an additional \$12 for that service. ✓

BBS News

(continued from page 13)

Did you notice that I haven't yet mentioned the new hard drive? The hard drive was an entirely different problem. For some time our BBS has been operating with a Quantum 105 meg and a Seagate 80 meg drive. The Seagate was the older of the two and simply wore out. Have you ever heard the sound of a rock polisher emanating from a hard drive? It's not a pretty sound, let me tell you. And it's a sound we were hearing more and more often. BBS crashes were becoming more frequent. So there was really very little choice possible in this case. We replaced the Seagate with a second Quantum 105 meg drive.

Where does that leave us? Our current BBS equipment consists of:

- An Amiga 2000 with 3 meg of RAM
- A Commodore 2091 SCSI controller
- Two Quantum P105S hard drives
- A Xetec SCSI Hard Drive/Tape controller
- A Xetec 150 megabyte streaming tape drive
- An ASDG Dual Serial Port Card
- Two Supra 2400 Plus modems

I want to take this opportunity to thank our local dealers, **The Edge Computer and Video** and **Metropolitan Computer Products** for their generous assistance in obtaining this equipment for the club. Without their help we would be a great deal poorer. Don't forget: they support us - we need to support them. Buy locally.

But the story's not over yet. The next change to the BBS will be a change in software. We will be switching to *Xenolink* as soon as we can get it all put together... look for early in 1992. *Xenolink* will allow us to provide more features than are currently possible. Be watching for more news as things progress. Also possible in 1992: 9600 baud. ✓

Thought For The Month



We Cannot Imagine
How Our Lives Can Be
More Frustrating
Or Complex

—
But Congress Can

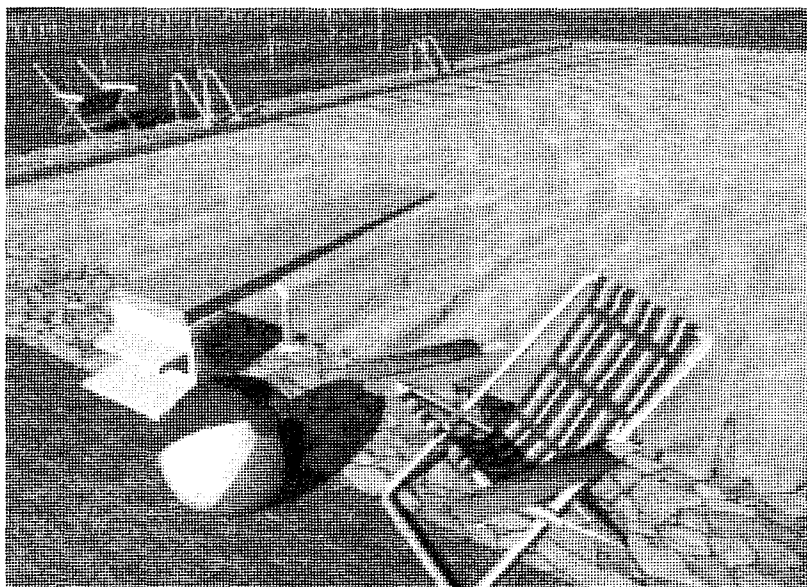
November Doorprizes

Thanks to our local dealers for their support

The Edge
 The Edge T-Shirt
 Amiga Games Mags
 Best of Amiga PD
 Stunt Car Racer
 DRAGON Force
 Atomino
 Vista Pro

Metropolitan
 Stryx
 Jinks
 Nitro

Ansoft
 Free video rentals



*Pool -
 from
 MCCC-A_347*

These Dealers offer discounts to MCCC members

Be sure to show your membership card

Action Computer
 C64, C128, Amiga Repair
 2720 Royal Lane
 Dallas, Texas 75229
 (214) 484-7838

ANSOFT Data Systems
 Amiga Software & Hardware
 925 University
 Fort Worth, Texas
 (817) 870-2529

**The Edge
 Computer &
 Video II**
 Amiga Software &
 Hardware
 3201 W. Airport Frwy.
 Suite 100
 Irving, Texas 75062
 (214) 570-1300

The Edge Computer & Video
 Amiga Software & Hardware
 14540 Beltwood Pkwy # 4
 Dallas, Texas 75244
 (214) 960-8633

Metropolitan Computer
 Amiga Software & Hardware
 4372 Spring Valley
 Dallas, Texas 75244
 (214) 702-9119

CHAPTER NEWS

Amiga By-The-Loop

Garry Wordelman

In November, our attendance was up to 35 or more and better than last month. The MCCC club officers were voted in unanimously by our chapter members during this meeting. Also at this meeting, the Amiga By-The-Loop Chapter officer slate for 1992 was presented by Dave Owens. They are as follows: President - Dave Owens, Vice President - Joanna Owens, Secretary - Pete Goad, Treasurer - Bruce Nelson and Librarian - Gary Campbell. These fine chapter members will be elected at our December meeting. Come and support them with your vote.

The program presentation in November was a demonstration of *Deluxe Paint IV* given by Brett Hester. *Deluxe Paint IV* is an excellent Electronics Arts package which is capable of great color, art and even animation. One of the more interesting capabilities of DP-4 is morphing an object. That is, it can be made to create a metamorphosis of one object or picture to another. You select the starting object, the ending object, the number of transition frames and sit back and wait for the results (the more the frames, the longer the wait). The results are extremely impressive and a well known example is the changing effect of the alien-to-metal man in *The Terminator 2* movie. Brett also demonstrated the effect of creating a brush from a cut off an object and generating a cycling brush from the object piece. Other features that were mentioned and/or demoed were stenciling, background lock, foreground lock, fill options (from left-to-right, top-to-bottom, center out, etc.), and creating multiple color palettes. Some other animation features besides morphing are flipping and rotating objects to enhance the 3-D effect. It even

works with DCTV and many other graphic programs. Brett did a great job of showing many of its multitude of features.

Our door prizes consisted of free video rentals from ANSOFT and the lucky winners were Ken Withrow and David Anspach.

Amiga Central

Harold Williams

The November Amiga Central Chapter meeting began with the unanimous approval of the proposed slate of club officers. A slate of chapter officers was also presented. Nominations for chapter officers for 1992 included Harold Williams/president, Johnny Kitchens/vice-president, Ray Howard/secretary, Bill Raecke/treasurer and Ned Kelly/librarian. The election will be held at the December meeting. After the business was taken care of, we had the usual discussion of recent developments and rumors in the Amiga world along with a spirited discussion of the new 2.0 AmigaDOS. Following the question/answer session we had a terrific presentation of 3-D utilities (*Map Master*, *Surface Master*, *Pixel 3-D 2.0*, *The Art Department Professional 2.0*, and several others) by David Johnson of Ansoft Data Systems. If you are serious about working in 3-D on the Amiga these packages can help turn you into a pro. We gave away a couple of door prizes at the end of the meeting. The Edge Computer & Video donated a T-shirt and Ansoft Data Systems donated a free video rental. Next month (December 19th) AmigaDOS 2.0 will be our feature topic. This extremely powerful upgrade to AmigaDOS 1.3 is finally available and currently in stock at all the local dealers. We'll take a close look at all the new bells and whistles.

Amiga North Dallas

Genny White

Happy Holidays to All! (Dear Santa, I want an A3000UX... don't bother to wrap it!) Our November meeting was a little less packed but as interesting as ever. I got to run it again, as THIS month DANNY had the laryngitis. We are most grateful to the nominees for chapter offices who have expressed willingness bear these responsibilities next year: For President, Henry Ribron; Vice-President, the ever-present and all-knowing Brett Hester; for Secretary, Me Again; for Treasurer, Gus Reiter; and for Librarian, William Dockendorf returns for another year of excellent disk-flipping. Nominations are open, but this slate of officers promises to be a good team. Elections will make them official in December. We also accepted as a chapter the new Club Officers as nominated. TidBytes: Our club membership price is going up, in case it hasn't been mentioned elsewhere here. As of January 1st, new or renewing members will pay \$24/year or \$15/6 months. After 7 or 8 years of unchanging dues, I think that's not unreasonable! But you can re-up NOW (even if your membership has a few more months on it) and save the \$4. I've given MCCC memberships as Christmas presents to friends and family: think of all we get! An excellent library, an interesting and informative newsletter, discounts, BBS support, and best of all a wide network of friends with common interests, problems, and solutions to share! (There. Enough of that for another year.) Speaking of prices going up, the drastic increase in the Video Toaster price has a LOT of people very upset. Care to write and complain to the makers? Other gripes: *Word Perfect* development has been abandoned, and NOBODY likes the latest trend in phone

CHAPTER NEWS

support: "900" numbers. In other news, there are rumors of a new A500 in Europe with 2.0 and 1 mb of chip ram, and word of an Amiga emulator for the PC (tee hee!). People are looking for a way to network PC storage devices with the Amiga (like ParNet does for multiple Amigas). We heard about Christmas fun at The Edge, Metropolitan, and our own party (by the time you read this, you will have had a wonderful time at it), and non-seasonal fun in the form of a long-term game-playing competition at The Edge.

On to our Demo at last: Rusty Byard from Metropolitan brought in a CDTV or two, and All the Software you Always Wanted to See. After a brief general intro, Rusty led us through the *Groliers Encyclopedia* (look at a portrait of Beethoven, hear his music, and read about his life) and the *World Vista Atlas* (listen to a sample of a country's language and music, see famous sites, explore scrolling maps of major cities). For fun, we visited *Defender of the Crown* (much enhanced music and voices from the standard Amiga version) and a Snoopy game. We read a bit of *Cinderella*, or rather had it read to us, with each phrase highlighted on the "book page" and a glossary and even alternate languages available for reference. We saw a tantalizing demo from *Psygnosis* of a forthcoming flight simulator, *Planetside*, with fractal terrain and catch-your-breath live action graphics: "What you are about to see is a prototype of a future interactive experience." (Couldn't have put it better myself.) We heard CD+G (+Graphics) albums by Jimi Hendrix and Fleetwood Mac, while dazzling patterns and scrolling lyrics entertained our eyes. We didn't see but heard about the complete KJV Bible and the full works of Shakespeare. And everyone knows about the whole 500+ Fred Fish Disk library on a single CD (about \$50, upgrades only \$29). I Am Impressed!

There was also info about the hardware itself: Look for a Christmas package of a CDTV with KEYBOARD, TRACK BALL, *Lemmings*, and the Encyclopedia. Rusty has found a local fellow who has developed the cable necessary to hook an A2000 keyboard to the CDTV, with connections for joysticks, etc., which has been long needed. Maybe after the Christmas rush you can get keyboards from Commodore for the CDTV without resorting to his resourcefulness. Remember, this gift of New Technology only LOOKS like something you put into your entertainment center with the VCR and the stereo... hiding inside is a real Amiga. All it needs is an external floppy and a keyboard to run any of your favorite 1-Meg Amiga programs. (Hey Santa... if the A3000UX is too much, have I been good enough for a \$759 CDTV???)

Speaking of Santa Claus, we had almost one doorprize apiece from our very generous dealers! The Edge brought us 4 different copies of *Amiga Games* magazine (with disk), 2 issues of *Best of Amiga PD* (3 disks each), plus *Stunt Car Racer*, *D.R.A.G.O.N. Force* (I don't know about the game, but I LOVE that jacket patch...), *Atomino*, and (how did Brett manage to win THIS one?) a copy of *VistaPro*. Wow! Thanks to Mark Henry, and The Edge! From



our good friends at Metropolitan, we got Rusty (well, his excellent demo, anyway), *Stryx*, *Jinks*, and *Nitro*. I'll bring cookies for the next meeting (if we aren't partied out by then), and we'll relax

a bit for the holiday gathering and share the newest games and fun stuff. Anyone want to bring a favorite game and/or machine? Call me (422-7131) and I'll try to coordinate.

Fort Worth

Julia Sookma

We had a good turnout at our November meeting. We even had a visit from Okley Moss, our BBS Coordinator. Okley reported a new disk drive was purchased for the BBS. He also gave a brief overview of the club BBS.

Election of 1992 chapter officers was held. Those elected to serve are:

President - John Sookma
Vice-President - John Burt
Treasurer - Julia Sookma
Secretary - Mary Louise Hagemeyer
Librarian - James Dunnam

We look forward to a productive and exciting year for our chapter in '92!

John Burt presented *FastCad* (an improved version of *CAD 3.0*). A joystick or mouse can be used in the designing process. Yes, computer-aided-design on a C-64! Lines, circles, area-fill are just a few of the many available options. Of course, designs can be stored for later use and printout. The program manual and keyboard overlay are included on-disk and may also be printed out.

Several new disks were "demoed" and placed into the chapter library. Programs included a baseball card database, lottery programs, some useful utilities, and an incredible beef jerky recipe!

Hope to see you at the Christmas Party on December 7. But don't forget! We WILL be meeting on December 14, 1:30 pm at West Berry Church of Christ, 2701 West Berry. Mark your calendars and make plans to be there!

The Fine Print

The Metroplex Commodore Computer Club

Statement of Purpose: The Metroplex Commodore Computer Club is a not-for-profit organization devoted to the collection and dissemination of computer knowledge, to the encouragement of computer education, and to the use of Commodore computers in the home, at school, and in business.

Legal Stuff: The MCCC is not connected with Commodore Business Machines, Inc. Commodore and Commodore product names (PET, CBM, VIC, C64, C128, and Amiga) are registered trademarks of Commodore, Inc.

Meetings and Membership: Our meetings are open to all. Family membership dues are \$20 per year or \$12 for six months, and entitle the member to a monthly mailed copy of the MCCC News, free access to the club's extensive public domain and shareware software library, and discounts at many area merchants. An additional \$12 annual fee provides access to the MCCC multi-user Bulletin Board System.

The MCCC News

Copyright Information: Material printed in the MCCC News is not copyrighted unless so noted. Articles may be reprinted or otherwise distributed by other user groups or by individuals who may find it helpful as long as proper credit is given to the author and to the MCCC.

Advertising: The MCCC News accepts two kinds of advertising. Member ads are those which are submitted by a member and which are not of a commercial nature. There is no charge for member ads. Commercial ads are those which advertise multiple like items for sale. Rates for camera-ready commercial ads are as follows for a single month or (prepaid consecutive three months): Full Page - \$36 (\$96); Half Page - \$18 (\$48); Quarter Page - \$12 (\$32); Business Card - \$6 (\$16). Materials to be inserted will cost \$.08 per copy (duplication not included) and must be inserted into all newsletters for the month.

Articles: Members are encouraged to submit articles. Articles should be submitted as ASCII text or in Amiga WordPerfect format. They may be uploaded to the MCCC BBS, to StarText, or submitted on disk. If these methods are not possible, I will, as a last resort, accept printed articles. If graphics need to be included they may be submitted as Amiga IFF files, PageStream structured drawings, Professional Draw clips, or, again as a last resort, printed output.

Deadline: The deadline for submissions to the MCCC News is 7am of the fourth Saturday of each month. Payment must accompany all ad copy. Make checks payable to MCCC and mail c/o Bill Raecke, 2614 Charolais Way, Arlington, Texas 76017.

Extra Copies: Extra Copies of the MCCC News may be obtained for \$1 per copy. Orders should be forwarded to the club along with the required fee by the regular newsletter deadline.

Normal Meeting Schedule

1st Saturday	MCCC Board of Directors
1st Saturday	HEB Chapter
2nd Tuesday	Amiga By-The-Loop Chapter
2nd Tuesday	Arlington/Grand Prairie Chapter
2nd Thursday	Amiga West Chapter
2nd Saturday	Fort Worth Chapter
2nd Saturday	Arlington/Grand Prairie Workshop
3rd Wednesday	Amiga North Dallas Chapter
3rd Thursday	Amiga Central Chapter

SIGS

Programmer SIG	Kevin Wambgan	214-414-9460
Toaster SIG	Brett Hester	214-233-5493
VidSIG	Jack DeTore	817-275-3762

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BBS Numbers	817-268-4191	817-268-4196

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Amiga By-The-Loop Chapter

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Treasurer	Bruce Nelson	817-498-0899
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Vice President	Blake Brown	214-641-0424
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Vice President	John Sookma	817-293-8691
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Hurst-Euless-Bedford Chapter

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Vice President	Jon Moreland	214-579-1293
Treasurer	Bill Howe	817-577-3898
Secretary	Robyn Wilson	817-282-3458
Librarian	Bill Worthington	817-834-6150



CALENDAR OF EVENTS

- | | |
|--|---|
| Dec 7 MCCC CHRISTMAS PARTY
1:00 - 5:00 pm - The AmeriSuites Hotel
3950 W. Airport Freeway, Irving
Ned Kelly, 817-277-5825 | Dec 14 Arlington/Grand Prairie Workshop
1:30 pm - Grand Prairie Public Library
Conover Drive, Grand Prairie
Blake Brown, 214-642-6107 |
| Dec 10 Amiga By-The-Loop Chapter
7:30 pm - N.Richland Hills Community Center
Loop 820 at Rufe Snow, N.Richland Hills
David Owens, 817-577-2304 | Dec 18 Amiga North Dallas Chapter
7:30 pm - Richardson Civic Center
411 West Arapaho, Richardson
Craig Bird, 817-540-3360 |
| Dec 10 Arlington/Grand Prairie Chapter
6:30 pm - Grand Prairie Public Library
Conover Drive, Grand Prairie
Glen Herring, 817-572-0489 | Dec 19 Amiga Central Chapter
7:30 pm - Arlington Community Center
2800 S. Center, Arlington
Ray Howard, 214-660-4819 |
| Dec 12 Amiga West Chapter
7:30 pm - Texas College of Osteopathic Medicine
Lancaster & Camp Bowie, Fort Worth
Jack Smith, 817-924-9289 | Jan 4 MCCC Board of Directors
10:00 am - N.Richland Hills Community Center
Loop 820 at Rufe Snow, N.Richland Hills
Ray Howard, 214-660-4819 |
| Dec 14 Fort Worth Chapter
1:30 pm - West Berry Church of Christ
2701 West Berry, Fort Worth
John Sookma, 817-293-8691 | Jan 4 Hurst-Euless-Bedford Chapter
1:30 pm - Hurst Recreation Center
Mary Drive South of Pipeline, Hurst
Jesse Carden, 817-838-9530 |

Note early deadline —————> **January Newsletter Deadline - 7am, December 14**

MCCC NEWS

Metroplex Commodore Computer Club
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